16. (1.75 points)

Given the following information:

Accident	Cumulative Closed Claim Counts					
Half-Year	6 Months	12 Months	18 Months	24 Months	30 Months	36 Months
2010-1	4,898	7,349	7,571	7,647	7,647	7,647
2010-2	5,576	6,786	7,487	7,569	7,569	
2011-1	6,580	10,215	10,618	10,724		
2011-2	7,514	9,564	10,953			
2012-1	8,894	13,807				
2012-2	10,265					

Accident	Age-to-Age factors				
Half-Year	6-12	12-18	18-24	24-30	30-36
2010-1	1.500	1.030	1.010	1.000	1.000
2010-2	1.217	1.103	1.011	1.000	
2011-1	1.552	1.039	1.010		
2011-2	1.273	1.145			
2012-1	1.552				

Assume no closed claim count development after 36 months.

a. (1.25 point)

Estimate the ultimate claim count for accident year 2012.

b. (0.5 point)

Briefly discuss two advantages for analyzing this data using accident half-years as opposed to full accident years.

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Exam 5 Question #16

a. There appears to be a seasonal pattern in the age-to-age factors that causes differences between XXX-1 and XXX-2 half years.

I would select a separate pattern for each half year (-1 and -2) using simple all year averages.

	6-12	12-18	18-24	24-30	30-36	36-vlt
Sel (-1)	1.535	1.035	1.010	1.000	1.000	1.000
Sel (-2)	1.245	1.124	1.011	1.000	1.000	1.000

ULT count AY 2012 = 13,807(1.035)(1.01)+ 10,265(1.245)(1.124)(1.011)= 28,956

b. Allows for recognition of seasonal patterns in claims development

Allow for better recognition of growing portfolio as average accident date shifts.

OR

ADV 1: Since there is a pretty clear seasonality effect based on the ATA values that vary significantly by period, using this type of analysis captures these differences to produce a more accurate development projection.

ADV 2: Using shorter time frames such as half year can also help the accuracy of projection during times of greatly increasing exposure (due to higher granularity). This could be useful here, since the claims closed down the 6 and 12 month columns are increasing noticeably, which may be due in part to an exposure increase.

OR

1. Because of the developmental seasonality it helps to pick different patterns for the different half years'

2. The counts appear to be increasing at a decent rate. When counts are increasing like this it could mean an increase in exposures. Splitting the years into half-years better deals with the changing average date of loss that accompanies rapidly increasing exposures.

a. In order to get full credit, candidates would need to calculate the basic premium and retrospective premium correctly, and calculate and apply the maximum/ minimum premium.

   The common errors included:
   - incorrectly calculating the capped losses
   - when calculating the basic premium, applying factors to adjust the net insurance charge that was provided in the question
   - incorrect basic premium formula
   - not applying the max/ min premium

b. Candidates did better on this part. The most common error was to provide reasons that the premium could increase, as it was already at the maximum level. However, if candidates incorrectly calculated the retrospective premium in part a, and produced a number that was in between the min and max, we did award them full credit in part b if they stated that premium could rise or fall.

16.

a. Most candidates were able to properly apply development factors, while not everyone reflected the seasonality in the data. Some of the common mistakes were as follows:

   - Developing the 6 month closed claims for the first half of the year instead of the 12 month closed claims.
   - Failing to reflect seasonality.
   - Applying 1st half factors to the 2nd half closed claims and vice-versa
   - Only calculating the ultimate claims for one half of the year

b. Most candidates were able to recognize the seasonality. A significant number also recognized the exposure growth and shifting of average accident date. A common mistake was to misinterpret the question as referring to development age (6, 12, 18, etc vs 12, 24, 36, etc). This resulted in many responses along the lines of making the LDFs less leveraged.

17.

a. About ½ the candidates received full credit on this question. The most common error was providing IBNR instead of total unpaid claims.

b. Many candidates got partial credit on this question for only listing the "industry development/mix might not be like carrier development/mix" limitation. The other two limitations (large loss and leveraged) were not very common. There were several common limitations that did not receive credit, such as "this method only produces unpaid claims" or answers that made reference to the other case outstanding method (references to claims made policies).

c. Many candidates got this question completely correct. A wide variety of answers were accepted, but did not give credit for candidates who said that the insurer had "limited" or